REMARKS

In the Office Action, Claims 15 to 20 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,686,203 to Idota et al. ("*Idota*"). In response, claim 15 has been amended to place the application in condition for allowance. Claims 17-19 have been cancelled without prejudice or disclaimer. Applicants believe the rejections are improper or have been overcome as set forth in detail below.

At the outset, Claim 20 has been amended to correct the dependency in view of the cancellation of Claims 17-19. This amendment was made for clarification purposes as fully supported in the specification and further not intended to narrow and/or disclaim any claimed subject matter in view of same.

The Patent Office alleges that the invention as a whole would have been obvious because *Idota* teaches that the conductivity-imparting agent may contain various carbon materials such as flaky graphite, carbon black, acetylene black, artificial graphite and mixtures thereof. The Patent Office further alleges that it would have been obvious to combine the artificial graphite with the flaky graphite and acetylene black/carbon black to form a conductivity-imparting agent including artificial graphite, flaky graphite and acetylene black.

Applicants respectfully disagree with and traverse the rejection because *Idota* does not teach all of the elements of Claims 15-20, as discussed in the previous Response. *Idota* merely provides carbonaceous materials as an optional material that can act as a conductive-imparting agent. For example, *Idota* provides that the compound capable of being doped with anions can include polymer compounds having resonance structures or carbonaceous compounds. Further, *Idota* does not disclose the specific combination of flaky graphite, carbon black and granular carbon as claimed and even admitted in the office action on p. 4. Indeed, *Idota* generally describes a number of different carbonaceous compounds that can be utilized. See, *Idota*, col. 3 ln. 38-42. Moreover, the examples in *Idota* merely relate to a single type of carbonaceous material. Therefore, *Idota* would not motivate one skilled in the art to combine carbonaceous materials for greater effect, let alone to combine the specific conductive agent materials as required by the claimed invention.

However, in order to expedite prosecution and in the spirit of cooperation, Applicants have amended Claim 15 to place the application in condition for allowance. Applicants assert

that amended independent Claim 15 is patentable over *Idota*. The battery of amended Claim 15 includes, in part, an anode mix and a cathode mix that each include a conductive agent consisting essentially of flaky graphite, granulated carbon and carbon black. The crystalline structure of the granular carbon has a thickness associated with a spacing of a (002) plane of about 100 nm or less. The flaky graphite has a thickness of a (002) plane spacing greater than 100 nm. The granulated carbon has a bulk density of at least 0.5 g/cm^3, the bulk density of carbon black is 0.4 g/cm^3 or less, and the weight ratio in the conductive agent between the flaky graphite and the granulated carbon with respect to the carbon black ranges from 99:1 to 70:30.

As discussed in the prior Response, the battery includes, in part, a conductive agent that consists essentially of flaky graphite, carbon black and granular carbon. As stated in the present Office Action, *Idota* does not have a specific teaching of a conductivity-imparting agent combination of flaky graphite, carbon black and a granular carbon having an Lc of 100 nm or less. Therefore, it follows that *Idota* does not disclose an anode mix and a cathode mix including granulated carbon with a bulk density of 0.5 g/cm^3, carbon black with a bulk density of 0.4 g/cm^3, and a weight ratio in the conductive agent between the flaky graphite and the granulated carbon with respect to the carbon black ranges from 99:1 to 70:30, in contrast to the claimed invention.

Furthermore, it would not be obvious to combine carbonaceous components discussed in *Idota* having the physical properties recited in Claim 15. For example, it would not be obvious to include carbon black with a bulk density of 0.4 g/cm^3 or less. In the Office Action, the Examiner indicated that it would be obvious to optimize the bulk density of the carbon materials because it is desirable to pack as much electrode material as possible into the allotted electrode space to obtain a higher capacity. See, Office Action, pages 4-5. On the contrary, to obtain a higher capacity it is desirable that the bulk density of the carbon black is lower in order to increase the three-dimensional spreading of the structure. Thus, the ability of the carbon black to absorb electrolyte solution is enhanced. See, Specification, page 10, lines 2-13. Therefore, Applicants respectfully submit that it would not be obvious to a person skilled in the art relying solely on *Idota* to arrive at the claimed invention.

For at least those reasons above, Applicants believe that amended Claim 15 is patentably distinguishable from *Idota* and obvious variations thereof. Accordingly, Applicants respectfully request that the obviousness rejection with respect to Claims 15, 16 and 20 be withdrawn.

For the foregoing reasons, Applicants respectfully submit that the present application is in condition for allowance and earnestly solicit reconsideration of the same.

Respectfully submitted,

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